



NiceZyme View of ENZYME: EC 3.5.3.1

Official Name

Arginase.

Alternative Name(s)

Arginine amidinase.

Canavanase.

Reaction catalysed

L-arginine + H(2)O <=> L-ornithine + urea

Cofactor(s)

Manganese.

Comment(s)

Also hydrolyzes alpha-N-substituted L-arginines and canavanine.

Human Genetic Disease(s)

Argininemia MIM:207800

Cross-references

Biochemical Pathways;
map number(s) F8

PROSITE PDOC00135

BRENDA 3.5.3.1

PUMA2 3.5.3.1

PRIAM enzyme-specific
profiles 3.5.3.1

Kyoto University
LIGAND chemical
database 3.5.3.1

IUBMB Enzyme
Nomenclature 3.5.3.1

IntEnz 3.5.3.1

MEDLINE Find literature relating to 3.5.3.1

MetaCyc 3.5.3.1

P46637, ARG11_ARATH;	P05089, ARG11_HUMAN;	Q61176, ARG11_MOUSE;
Q95JC8, ARG11_PIG;	Q95KM0, ARG11_RABIT;	P07824, ARG11_RAT;
P37818, ARG11_SCHPO;	P30759, ARG11_XENLA;	Q9ZPF5, ARG12_ARATH;
Q58DL1, ARG12_BOVIN;	P78540, ARG12_HUMAN;	O08691, ARG12_MOUSE;
Q4VK78, ARG12_RABIT;	O08701, ARG12_RAT;	Q10066, ARG12_SCHPO;
P14012, ARG1_AGRT5;	Q742W4, ARG1_ASHGO;	P53608, ARG1_BACCD;



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Entry EC 3.5.3.1 Enzyme

Name arginase;
arginine amidinase;
canavanase;
L-arginase;
arginine transamidinase

Class Hydrolases
Acting on carbon-nitrogen bonds, other than peptide bonds
In linear amidines

Sysname L-arginine amidinohydrolase

Reaction L-arginine + H₂O = L-ornithine + urea
[RN:R00551]

Substrate L-arginine [CPD:C00062]
H₂O [CPD:C00001]

Product L-ornithine [CPD:C00077]
urea [CPD:C00086]

Comment Also hydrolyses alpha-N-substituted L-arginines and canavanine.

Pathway PATH: map00220 Urea cycle and metabolism of amino groups
PATH: map00330 Arginine and proline metabolism

Ortholog KO: K01476 arginase

Genes HSA: 383(ARG1) 384(ARG2)
MMU: 11846(Arg1) 11847(Arg2)
RNO: 29215(Arg2) 29221(Arg1)
SSC: 397115(ARG1)
XLA: 379198(MGC53991) 380109(arg1-prov) 397788(LOC397788)
XTR: 448358(arg1-prov)
DME: CG18104-PA(CG18104)
ATH: At4g08870(T3H13.10) At4g08900(T3H13.7)
SCE: YPL111W(CAR1)
AGO: AGR225C(AGR225Cp)
CAL: orf19.3934(CAR1)
SPO: SPAC3H1.07(aru1) SPBP26C9.02c(car1)
CNE: CNG00550
TBR: Tb927.8.2020(Tb08.26N11.490)
LMA: LmjF35.1480
EHI: 6.t00005
XFA: XF1250
XFT: PD0517(rocF)
XCC: XCC3926(argI)
XCB: XC_4015
XCV: XCV4102(argI)
XAC: XAC4009(argI)
XOO: XOO0435(argI)
PSB: Psyr_2212
NOC: Noc_1712
RSO: RSc0158(RS01028)
REU: Reut_B4054
BPE: BP0538
BPA: BPP0749
BBR: BB0835